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Lessons from 20 Years of Cohesion

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1. Introduction

Over the last twenty years the four poorest states in the EU 15 have experienced very significant benefits as a consequence of their membership of the EU. Ireland became a member of the then EEC as early as 1973, whereas Greece became a member in 1980 and Spain and Portugal in the middle of the 1980s. These four “cohesion” states have pursued rather different policies over the past twenty years and have undergone rather different experiences of integration into the EU economy. For three of the four countries the last twenty years have seen a significant convergence in living standards towards the EU average. For Ireland the period of convergence in the 1990s was quite dramatic in terms of its speed. However, the progress in Spain and Portugal was also notable over the same period. It is only in the case of Greece that the progress has been less marked over the same period.

These differing experiences of integration into the EU economy carry some lessons. It is clear from the sheer diversity of the policies pursued and the differing pace of adjustment that there is not a single “model” of convergence. There are many different possible paths for states to promote economic development and no single strategy dominates the other possible strategies. Nonetheless, out of this diversity there are a number of common themes which may prove useful to the ten new member states, which are already well down the path to integration into the wider EU economy.

Economic development is a long-term process – there is no simple instrument that can painlessly transform an economy overnight. Much public discourse ignores this fact, seeking immediate solutions to what is inevitably a long-term problem of underdevelopment. Research into the process of catching up (economic convergence) must take this into account. It makes the identification of the role of the different economic processes in promoting convergence no simple task. However, it is clear from the huge experience built up over the last half century that certain key elements are essential economic prosperity: free trade and an open and competitive economy, investment in human capital, and adequate infrastructure.

Free trade is sometimes sold as a simple and speedy medicine that will rapidly transform an economy from poverty to wealth. In fact it is a far from simple process, operating through many different channels simultaneously. Even if the process of adjustment to free trade is properly managed it will take some considerable time to produce its full benefits. The process of adjustment from a regime of autarchy to a regime of free trade will also involve considerable adjustment costs. However, the experience of the existing four cohesion countries, Greece, Ireland, Portugal and Spain, suggests that even during the adjustment to free trade, the costs are offset by benefits, and the long-term effects are hugely beneficial.

Membership of the European Union is more than just membership of a free trade zone. It enshrines the free movement of labour and capital as well as goods. The completion of the internal market in 1992 completed this process of integration for the existing EU members. The success of the Single Market programme has been very important, not just for the richer members of the EU, but also for the existing four cohesion countries. While the manifesto of the Single Market, the Cecchini report (1988), raised the possibility that some of the more peripheral countries might lose out as a result of the completion of the market, the opposite has proved to be the case. As is discussed below, the 1990s saw considerable success in the process of convergence, as the cohesion countries narrowed the gap in living standards between them and the richer members of the EU.

The Structural Funds support for the cohesion countries was increased in the late 1980s in anticipation that these countries would face problems of adjustment. While this additional support contributed to the process of convergence, it is clear that market forces played a much more important role in promoting cohesion within the wider EU. It is also clear that the

completion of the internal market was generally good for promoting convergence rather than the reverse (ESRI, 1997). It is the strength of the market forces promoting cohesion among the fifteen “old” members which is the key message for the “new” members who joined on the first of May 2004.

For the new members, the way forward was clear from the fall of the iron curtain. The process of adjustment to free trade and preparation for EU membership began immediately on the change of political regime. All these countries have undergone a very painful process of adjustment, with much of the existing business base closing and gradually being replaced by new businesses. There have been considerable social costs to this adjustment, with continuing high levels of unemployment in many of these countries. However, the experience of the existing cohesion countries, Ireland, Spain, Portugal and Greece, indicates that such a painful process will be rewarded by more rapid growth within an enlarged EU market.

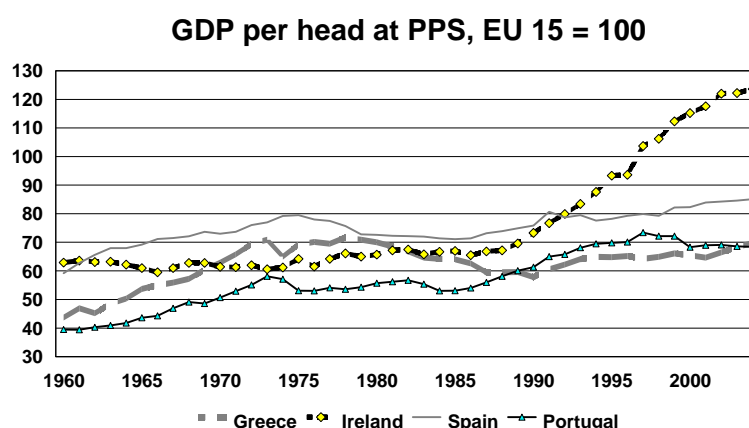
While the four existing cohesion countries had an easier transition to full EU membership than has been the case for those who joined earlier this year, it was by no means easy. Many of the same problems, of industrial decline and social dislocation, have been experienced in the process of convergence, albeit on a somewhat smaller scale. The reassuring feature of this story is that the strength of the forces driving convergence has been sufficient to overcome the many policy mistakes that have been made along the way in the four cohesion countries.

This paper considers some of the lessons that can be learned from the experience of the existing cohesion countries – how to do it better. The paper first considers the record on convergence and the role of the single market and the domestic policy environment in bringing it about. It then considers the significance in this process of convergence of flexible labour markets, of investment in human capital, and investment in infrastructure.

2. The record

The process of convergence has not been straightforward, with each of the four countries pursuing rather different paths. Taking output per capita, adjusted for PPS, as the measure of convergence, Figure 1 shows the contrasting paths of the four cohesion countries over the last 20 years.

Figure 1: GDP per head, adjusted for PPS, relative to EU average



In the case of Ireland there was little change over the period 1960 to 1990. However, over the course of the 1990s Irish GDP per head moved from about 60% of the EU average in 1990 to over 120% of the EU average today. In terms of GNP per head, a more appropriate measure of standard of living for Ireland, the Irish position today is just over 100% of the EU average,

still a notable rate of convergence over a short period of time.¹ A number of studies have argued that the exceptionally rapid Irish convergence to the EU average should be seen as a belated convergence, one that would have occurred more gradually over the previous twenty years if more appropriate domestic policies had been pursued (Fitz Gerald, 2000 and Honohan and Walsh, 2003).

In the case of Spain there has also been notable progress, moving from a GDP per head of 70% of the EU average at the time of accession to the EU in the mid-1980s to around 85% today. Beginning from a lower base at the time of EU membership, at 53% of the EU average, Portugal has moved to around 68% of the EU average to date, a rather similar speed of convergence to that of Spain. Greece is the exception among the four cohesion countries with a GDP per head of around 70% of the EU average, roughly the position it was in at the time of membership in 1980.

To better understand the factors driving convergence it is useful to decompose the change in living standards into a number of components, as shown in Figure 2. Probably the key factor in the long-term convergence process is the growth in productivity. The growth in productivity can be affected by supply side policies in a number of different ways. However, public policy and the effects of EU integration can also affect the employment rate (the inverse of the unemployment rate) and the participation rate. While also affected by policy in the very long-term, the age dependency ratio was largely predetermined within the period of EU integration considered here: the effects of the fall in the birth rate in earlier decades takes some considerable time to affect this ratio.

Figure 2: Decomposition of Measure of GDP per head

$$\underbrace{\frac{GDP}{Pop}}_{\text{GDP per capita}} = \underbrace{\frac{GDP}{Emp}}_{\text{Productivity}} \cdot \underbrace{\frac{Emp}{LForce}}_{\text{Employment Rate}} \cdot \underbrace{\frac{LForce}{Pop1564}}_{\text{Participation Rate}} \cdot \underbrace{\frac{Pop1564}{Pop}}_{\text{Dependency Ratio (inverse)}}$$

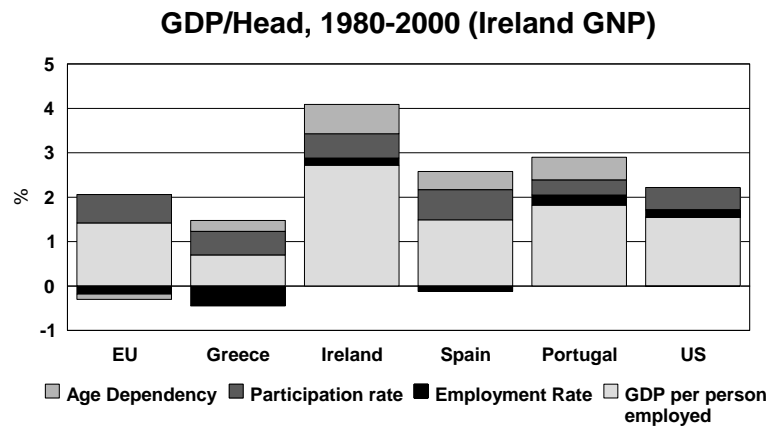
Figure 3 shows a decomposition of the growth in GDP per capita over the period 1980-2000 for the four cohesion countries. For comparative purposes a similar decomposition is shown for the EU as a whole and also for the US for the same period. (For Ireland the decomposition is made in terms of GNP/head, a better measure of standard of living than GDP/head.)

This Figure shows that an important factor in the convergence of Portugal and Ireland was that the growth in productivity was significantly greater than the EU average (or than in the US). For Spain the rate of growth of productivity was also slightly greater than for the EU as a whole. In the case of Greece the growth in productivity was notably slower than for the rest of the EU. It is this more rapid growth in productivity in Ireland and Portugal that is likely to be crucial for the accession countries if they are to show a rapid convergence to the EU average over the coming decade. In subsequent sections, this paper concentrates on the factors affecting the growth in productivity and on how public policy can accelerate the growth in this vital factor.

The rise in the participation rate was fairly general across the four cohesion countries and was broadly in line with the experience of the rest of the EU and of the US over the same period. The biggest contribution of rising participation rates to growth in GDP per head was that in Spain of 0.7% a year compared to an EU average of 0.6% a year and 0.3% a year for Portugal.

¹ GNP excludes profit repatriations by foreign multinationals, which represent a significant share of GDP in Ireland. These repatriations are not available as income for Irish residents and do not contribute directly to enhancing the standard of living.

Figure 3: Decomposition of Growth in GDP per capita, 1980-2000



The other major factor contributing to convergence was the growth in GDP per head arising from the fall in the rate of age dependency. This reflects the fact that the birth rate fell rather later in the four cohesion countries than in the EU as a whole. In Ireland the fall in the birth rate, which began in 1980, was compounded by the effects of past emigration. The very high rate of emigration in the 1930s, 1940s and the 1950s has the effect of reducing the numbers aged over 65 in the population today.

This benefit from the fall in age-dependency is an exceptional factor, which will be reversed in the very long run. It is also unlikely to be relevant for most of the accession countries, which have a demographic profile closer to that of the richer members of the EU 15, who are now suffering from the problems associated with rising age dependency.

3. EU integration, the Single Market and a Competitive Economy

The single most important factor in promoting convergence between the four existing cohesion countries and the rest of the existing EU has been free trade. For much of Western Europe the period after the Second World War saw an immediate recognition of the importance of free trade in promoting growth. The foundation of the EEC in 1956 was the most obvious manifestation of this policy. However, it was also central to the economic policies of the bulk of the non-EEC members in Western Europe and to the United States. The foundation of EFTA further strengthened this commitment to free trade.

The fruits of the commitment to free trade can be seen in the rapid growth of most of the economies in Western Europe. The exceptions to this widespread adoption of a policy of openness and free trade were the four existing cohesion countries, which together lagged behind the rapid progress in the rest of Western Europe.

In the case of Ireland the rapid growth of the 1990s is often portrayed as a success story that could be repeated in other countries. However, it is better understood as belated progress, progress that would almost certainly have occurred much earlier if Ireland had pursued a more enlightened policy in the years immediately following the Second World War. Unlike much of the rest of Western Europe Ireland continued to pursue a policy of self-development, closed to the outside world, for much of the 1950s. It was only towards the end of that decade that it began to dawn on Irish policy-makers that they had “missed the boat” of free trade.

In the case of Spain and Portugal the obstacles to free trade were compounded by the undemocratic nature of the political regimes, which continued until the 1970s. The problems

of Greece were also compounded by the political difficulties of the country in the late 1960s and the 1970s.

While economic theory has long taught the central importance of free trade, it does not mean that adjusting to such a regime is an easy process. In the case of Ireland, because the process was long drawn out the costs and benefits of the change in regime are difficult to disentangle from the policy mistakes that overlay the process. These issues are discussed in detail in Fitz Gerald, 2000, and Honohan and Walsh, 2003. These included the continuation of a policy of economic autarchy through the 1950s; a failure to invest in human capital when the rest of Northern Europe from the Urals in Russia to Snowdonia in the United Kingdom realised its importance; and the serious mistakes in fiscal policy in the late 1970s and the early 1980s. Without these mistakes the process of economic convergence would almost certainly have occurred much sooner in Ireland.

The public finance crisis of Ireland in the 1980s was a self-inflicted wound. The serious delays in undertaking the necessary adjustment in the early years of the 1980s compounded these problems. By reducing the resources available for investment in human capital and infrastructure the crisis had a serious medium-term impact on the economy's potential growth rate. In addition, in the early years of adjustment the focus was more on raising taxation than on cutting current expenditure. As Alesina and Perotti, 1995, indicate, fiscal adjustments are more successful when they rely on cutting current expenditure. The Finnish experience of the early 1990s shows that a short sharp adjustment process, while painful, can minimise the long-term damage to an economy.

A second aspect of the experience of the four cohesion countries relevant to the new members of the EU is the importance of embracing the opportunities that EU membership offers, rather than fighting a rearguard action to preserve businesses and sectors that are in decline. Letting firms die through the operation of market forces is very painful socially and politically. However, the desperate fiscal position faced by many of the accession states in the early years of the 1990s left them with little choice but to pursue such a policy. A fiscal crisis in Ireland in the early 1980s also forced the abolition of the agency that was targeted at supporting domestic firms facing major difficulties from the transition process. At the time it was painful but it helped to force a change in the focus of economic policy directed at sectors of the economy likely to grow in the future. Indirectly this involved seeking to promote business that provided skilled jobs, likely to be competitive in the long term, rather than attracting low-skilled employment, which was likely to have a shorter "shelf life".

A key positive factor in promoting the transformation of the economies of some of the existing cohesion countries has been the process of Foreign Direct Investment (FDI). In Ireland it played a central role in policy over the last forty years. It was adopted at the beginning of the process of opening the economy to free trade in the late 1950s, and it has been pursued with consistency by all governments since then. The importance of the consistency with which this policy was pursued in establishing credibility with potential investors has been emphasised by Ruane and Görg, 1997. Multinational investors are cautious and they require proof that the legal, regulatory and tax framework in the countries where they are considering investing is stable and is unlikely to change in an unfavourable way. Establishing such a track record takes time and many accession countries have not yet seen the full benefits of the reforms undertaken over the last decade in the form of increased investment.

The most important factor in attracting foreign direct investment has been the guarantee of ready access to the huge EU market. Once it became clear that Spain would definitely join the EU it began to see a significant flow of foreign investment. So too, once it became certain that countries such as Hungary and Poland would join the EU investors were reassured and moved

accordingly. Thus the 1st of May 2004 was not the key date for foreign investors; they were already treating the accession countries as EU members in making their investment decisions.

Foreign direct investment has played a wider role in promoting development in the cohesion countries than would be accounted for by its direct share of output in the economy. It has helped to bring in new skills and so to expand the human capital of the work force. For economies with little experience of trading in a wider European market, the management skills and the ready access to markets abroad which foreign investors bring has expanded the vision of business throughout the economies of the countries where they operate. This has been particularly important in Ireland, but it has also played an important role in Spain. Greece has proved to be a less attractive market for foreign direct investment than the other cohesion countries.

Creating a competitive economy is not just about eliminating barriers to trade. It is also very important to tackle the barriers to competition within individual economies. The “Lisbon Agenda” was important long before its name was coined. In the case of each of the cohesion economies internal barriers to trade and efficiency were important factors in the relatively underdeveloped nature of their economies. The success or otherwise in tackling these problems has affected the speed with which these economies have converged to the EU average standard of living.

4. The Labour Market

The behaviour of the labour market has been of crucial importance in the process of convergence in each of the cohesion countries. Inflexibility in the labour markets of the different countries has posed obstacles for the convergence process. Too rapid a convergence in wage rates, with a resulting loss of competitiveness could slow or halt the convergence process, while a slow adjustment of wage rates to rising productivity levels could hasten convergence. The experience of the four cohesion economies, where market forces have played an important role in the speed of adjustment of wage rates, can be contrasted with that of East Germany where the convergence in wage rates was determined institutionally.

Each of the cohesion countries has undergone a process of transition, including freeing of trade and EU membership, affecting both the demand for labour and the supply of labour. In the case of labour supply the role of trade unions has changed, with direct implications for the wage bargaining process itself. EU membership has also opened up the possibility of migration affecting labour supply. On the demand side, membership of the EU and the completion of the Single Market have changed the focus for many of the firms operating in these previously rather closed economies. Today firms producing tradable goods, and increasingly tradable services, are competing in a global market and this has important implications for the factors driving their demand for labour.

The Irish labour market has a unique structure, having been so closely integrated with that of the UK in the past, and having a very elastic supply of labour through short-term migration. There are many similarities in the structure of the Iberian labour markets, such as relatively high levels of employment protection (see OECD, 1999), apparently similar architecture of wage bargaining, and comparable generosity of unemployment insurance systems since 1989 (Bover et al., 2000). However, these similarities mask significantly different labour market outcomes, with Portugal enjoying one of the lowest unemployment rates in the EU (4.1% in 2001) while Spain suffered the highest (13% in 2001).

In looking at Ireland, Spain and Portugal we are considering three very different economies that have shown significant convergence towards the EU average standard of living over the last thirty years (see Fitz Gerald and Hore 2002 for a fuller discussion). All three have

undergone radical transformation in that period and all three have become members of the EU since 1970. This process of convergence has affected the process of wage determination.

In a standard neo-classical model, if wage rates converge too rapidly towards the EU standard of living, then the incentive for firms to increase production in the converging economy will be reduced. This could slow, or even halt the process of convergence. On the other hand, if wage rates were to lag behind the convergence in living standards (measured in terms of output), then the enhanced profitability of firms could accelerate the convergence process. The rise in output and the rise in productivity will themselves affect the labour market through their effects on the demand for labour. EU membership and the broader process of EU integration could also be expected to affect the supply of labour through enhancing the opportunity for migration and, indirectly, through changing expectations and the regulation of the labour market. Thus the behaviour of the labour market can play a potentially important role in determining the speed and nature of the convergence process.

Figure 4: Ireland - Wage and Output Convergence
GNP Relative to EU, Labour Costs Relative to UK

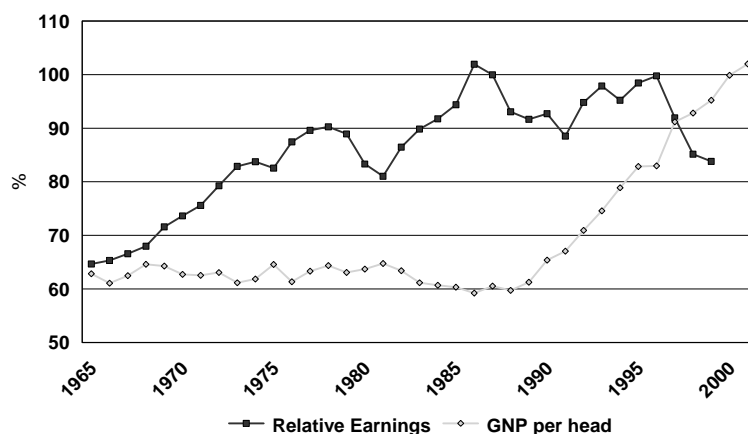


Figure 5: Spain - Wage and Output Convergence
GDP Relative to EU, Labour Costs Relative to France

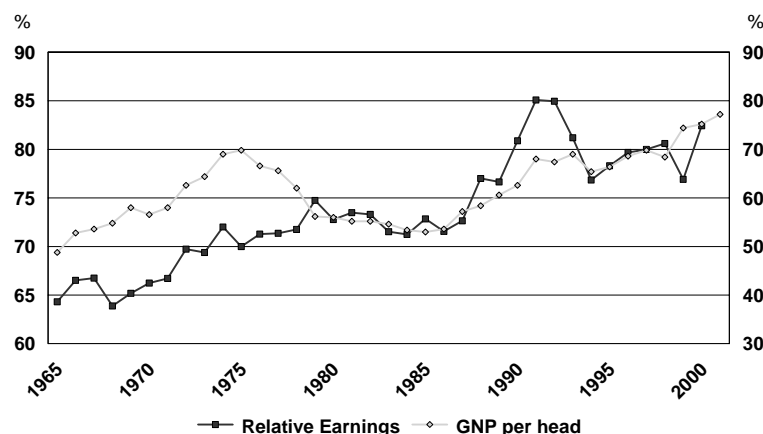
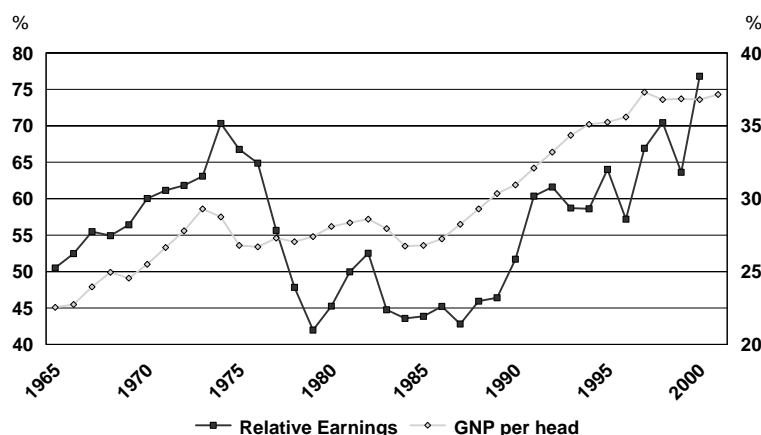


Figure 4 shows Irish labour costs have moved relative to the UK over the 40 years from 1960 to 2000. Between 1960 and the mid-1970s Irish labour costs rose rapidly relative to the UK. However, from the late 1970s to today Irish labour costs have plateaued out, fluctuating around a level of 90 per cent of UK labour costs. Since 1980 such changes as have occurred have arisen from changes in the exchange rate, with no obvious long-term trend in relative wage rates. This convergence in labour costs predates the convergence in living standards to the EU average, as shown in Figure 4.

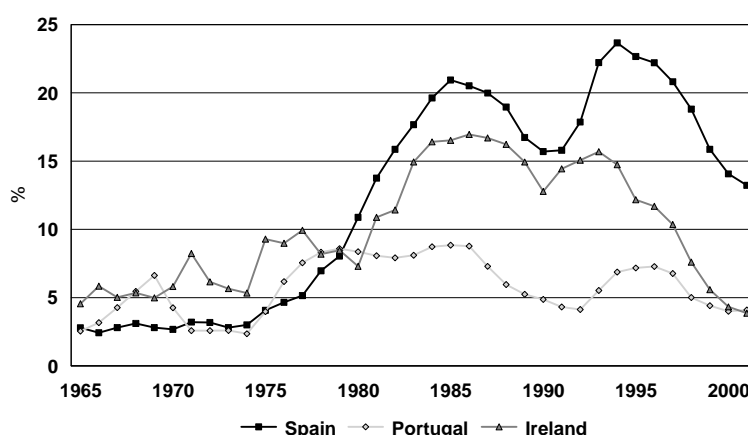
Figure 5 shows the path of wage and output convergence in Spain since the mid-1960s. While less dramatic than in the case of Ireland, relatively steady progress is seen in the process of convergence over the full period. In the case of labour costs, they rose much more rapidly in Spain in the early 1990s than in other partner EU countries. However, within a few years there was a major downward adjustment, such that labour costs in Spain fell back below 70 per cent of the French level, while convergence in living standards continued.

Figure 6: Portugal - Wage and Output Convergence
GDP Relative to EU, Labour Costs Relative to France



As shown in Figure 6, since joining the EU in the mid-1980s Portugal has made fairly steady progress in terms of convergence in living standards towards the EU average. While still experiencing a significantly lower standard of living than the average, the gap has narrowed dramatically over the last fifteen years. Labour costs began the 1980s very much below labour costs elsewhere in the EU. They began to rise more rapidly than in France in the late 1980s, after the process of convergence in living standards had begun. Since then progress has continued over the 1990s. However, unlike the case of Spain and Ireland, they still remain very far below EU average levels. To some extent this reflects lower price levels in Portugal, so that the purchasing power of a given level of wages (in euros) is higher than in neighbouring countries. However, even allowing for this difference in prices, the figures still reflect the fact that the purchasing power of wage rates in Portugal remains well below that in the rest of the EU.

Figure 7: Unemployment Rates



If the labour market cleared instantly then the explanation for the path of wage rates would be found through modelling labour demand and labour supply; the wage determination equation would just be a reduced form of the simple underlying structural model. However, as shown

in Figure 7, the path of unemployment in Spain and Ireland indicates that the labour market has been very slow to clear. In Portugal, by contrast, unemployment never rose above 9 per cent of the labour force and the labour market has shown more rapid adjustment to the state of the economic cycle.

In the case of Ireland, unemployment rose rapidly in the early 1980s. While there was certainly evidence that it was affected by the state of the economic cycle, there was also extensive evidence of hysteresis. However, the late 1990s and the early years of this decade witnessed a phenomenal reduction in the unemployment rate, as the domestic economy boomed, resulting in a record rate of employment growth. The unemployment rate reached a historic low of 3.8% in 2001.

For Spain, the pattern of the unemployment rate mirrored that in Ireland in the 1980s, with little evidence that the labour market cleared in the short term. However, the rate rose further in the early 1990's, reaching a much higher level, and still remains high relative to the rest of the EU, even given a phase of rapid economic growth throughout the late 1990s. This contrasts sharply with the Portuguese unemployment rate, which has remained lower than most EU countries throughout the period under consideration. It seems that the explanation for such different performance lies in differing labour market institutions and wage adjustment processes between Spain and Portugal. Demand- or supply-side shocks are unlikely to hold the key to explaining the differing performances, as both Spain and Portugal have been exposed to similar shocks since the 1970's. However, when different labour market institutions are exposed to similar shocks, this can lead to significantly different outcomes (Blanchard and Wolfers, 2000).

Blanchard and Jimeno (1995) identify the unemployment benefit system as one of the key differences between the countries, with a generous system in operation in Spain whereas benefits were virtually non-existent in Portugal before 1986. Throughout the 1990's replacement ratios and benefit coverage have converged between the two countries, although the system still remains more generous in Spain. Another similarity between the countries is the existence of minimum wage laws set each year, including collective bargaining agreements that set wage floors for the different occupation categories. However, these wage floors are set at a relatively lower level in Portugal, thus giving the employer more scope for manoeuvre. This results in actual wages exceeding the agreed minimum levels in Portugal (by about 10% for unskilled workers), but not in Spain (see Bover et al., 2000).

These data suggest that the Portuguese labour market has been more flexible than that of Spain and Ireland, with wage rates adjusting to clear the labour market over a relatively short space of time. However, labour market reforms in Spain gradually reduced employment protection since the late 1980s (by narrowing the definition of an "unfair" dismissal) and also increased the number of workers on fixed term contracts, thus adding more flexibility to the system. Nevertheless, a more generous benefit system combined with less flexibility in wages helps to explain the large unemployment differential between Spain and Portugal.

The data shown above for relative labour costs include both wage costs and social insurance contributions paid by employers. The after-tax wages received by individual workers are significantly different from the cost to employers, due to the operation of the tax (including social insurance) system. For employees what concerns them in the long run is the development of real after tax wage rates. For employers it is the cost of employing a unit of labour relative to the price they get for their output. The "wedge" between these two prices is accounted for by changes in tax rates and changes in output prices relative to consumer prices.

The rise in tax rates, especially when the rise was quite rapid, may have had an impact on wage determination. The evidence in Drèze and Bean, 1990, using data for an earlier period, found that the tax wedge did not have a significant effect on wage determination in many of

the countries they considered. However, they did find a significant effect on Spanish wage rates (they did not consider Ireland). Anderton and Barrell (1995) did not find any long run effect of the tax wedge for Spain, but did find a significant effect for Ireland, consistent with Bradley and Fitz Gerald (Bradley et al., 1993). Fitz Gerald and Hore, 2002, using more recent data find a significant tax wedge effect for the three countries Ireland, Spain and Portugal. As a result, the rise in taxes to fund enhanced public services on joining the EU had a knock-on effect on domestic wage rates and labour cost competitiveness.

The ratio of personal taxation to personal income for Ireland, Spain and Portugal rose fairly steadily up to the 1980s. In the case of Ireland it peaked in 1987 and fell back by 1990, remaining relatively unchanged thereafter. In the case of Spain it continued to increase until the early 1990s, showing some small reduction in 1995. In Portugal, while showing a fairly continuous increase over the thirty years, it grew particularly rapidly in the second half of the 1980s. The effect of this rise in tax rates was to put upward pressure on wage rates, adversely affecting the competitiveness of these economies.

The final factor that potentially affects labour supply in a global economy is migration and its related effect on employees' expectations. While in a closed economy, labour is assumed to choose between employment in the domestic economy and leisure (unemployment), in an open economy migration presents a third possibility. In a fully integrated market, labour in one country or region can choose between the after tax wage rate available in the home country or region and the after tax wage rate in other countries or regions. Obviously there are costs to migration so that the rate of return in the foreign country must significantly exceed that in the home country to adequately reward migration. The broad process of European integration improves information on living standards in neighbouring countries (or regions), and this may give rise to pressures for similar conditions domestically, even if the costs of migration prevent the bulk of the labour force from moving.

While in the case of Ireland, migration to the UK has been unrestricted for the last two centuries, the same was not true for emigration from Spain and Portugal. In the latter two countries full free movement of labour only became possible with EU entry in 1986. However, even with the possibility of free movement of labour after EU entry, Blanchard and Jimeno (1995) find that migration has not played a major role in balancing the labour markets in Spain and Portugal. While migration is not a major determinant of labour supply in Spain, there may be some role for migration in the wage determination process in Portugal. In 1999, over half a million Portuguese were living in France, representing 5% of the total Portuguese population. In 1982, there were over three-quarters of a million Portuguese living in France, almost 8% of the total population (see OECD, 2001). Although the number living in France has declined, the number living in Belgium, Germany and Luxembourg has doubled over the same period.

A succession of papers highlights the importance for Ireland of substantial migration flows relative to the size of the labour force. These flows are driven by changes in both unemployment and wages relative to the UK (see Barrett, 1998, Kearney, 1998, and O'Grada and Walsh, 1994). While changes in unemployment may exert a negative effect on wage rates in the short run, emigration will reduce unemployment in the long run, eliminating any downward pressure on wage rates. The converse will be true for falls in unemployment that will attract immigration.

As discussed above, while migration has had a significant effect on wage determination in Ireland, this was not the case for Spain and the Portuguese case requires further investigation. However, it played a significant role in the post-unification German labour market and, with EU enlargement, there remains the possibility that it could play an important role in the convergence process for the new EU member states.

In addition to the factors considered above, a range of institutional factors might have affected wage determination in the three countries examined. In Ireland, the advent of what is referred to as the “partnership process”, beginning in 1987, introduced institutionalised wage bargaining between the government, employers and trade unions (Sexton and O’Connell, 1996). The process involves an explicit trade off of tax-cuts for wage moderation. This arrangement has persisted up to and including the present.

Unionisation may also have played a significant role in affecting the wage bargaining process, changing the shape of the supply curve of labour. The evidence suggests that for Ireland, union density did play a significant role (Curtis and Fitz Gerald, 1994). However, unionisation was itself endogenous, and it may have picked up other aspects of structural change occurring in the economy. In the case of Spain unions only became legal in 1977, which means that any effect that unionisation could have is limited to the post-1980 period. Nevertheless, Blanchard and Portugal (2001) mention differences in union power as a principal factor behind longer unemployment duration in Spain than other countries.

Figure 8: Relative Skilled Wage Rates



Figure 9: Relative Unskilled Wage Rates



The opening up of the cohesion economies as part of the EU integration process changed the factors that affect the price they are prepared to pay for their factor inputs, including the price of labour. To remain competitive they have to consider the global demand for their product and their competitiveness compared to foreign producers.

In the case of labour supply, the potential to choose employment in different labour markets can directly affect expectations of individual workers. Even if the extent of migration is low, the potential for migration (the option value of a job abroad) affects wage expectations of individual employees. In turn this can affect the domestic supply of labour.

The analysis in Fitz Gerald and Hore, 2002, shows that integration into the European Union has significantly affected the wage determination process in Ireland, Portugal and Spain. In each of these three countries there is evidence of a change in wage formation behaviour because of the process of EU integration. As a result, labour market conditions elsewhere in the EU now directly affect domestic wages in these cohesion economies. Ireland has the most open labour market, with a lower degree of openness for Spain and Portugal. This reflects the fact that Irish labour supply is much more sensitive to labour market conditions abroad through migration, than is the case for the other two countries. For all three countries the bargaining behaviour of firms was affected by the process of EU integration.

The higher mobility of skilled labour within the EU could be expected to result in a narrower dispersion of skilled wage rates across the EU than for unskilled wage rates. Figures 8 and 9 give estimates for the dispersion of skilled and unskilled wage rates across most of the 15 EU members in 2000.² In the case of unskilled wage rates, the Portuguese and Spanish rates are around €5 and €8 an hour respectively whereas rates in Germany, the Netherlands and Finland are around €14 an hour – between twice and three times the Iberian rates. However, as shown in Figure 9, for skilled rates the German, Netherlands and Finish rates of around €25 an hour are less than twice the Portuguese and Spanish rates.

For employers, because of the wedge represented by payroll taxes, the dispersion of skilled wage rates is even narrower than it is for employees, with the cost lying between €20 and €30 an hour for most of the EU member states.

The Figures also show estimated skilled and unskilled rates for Hungary and Poland. In the case of these two countries there is, not surprisingly, a very big gap between their wage rates and even those of the poorest EU countries. This applies to both skilled and unskilled rates.

For the EU accession countries undergoing a fast-track accession process these results have important implications. The research that predicts major migration flows as a result of enlargement (Boeri and Brucker, 2000, and Sinn and Werding, 2001) fails to adequately take account of the likely impact of EU membership on the labour markets of the new members. The experience of Ireland, Portugal and Spain suggests that EU integration will cause wages to adjust upwards in the accession countries, as these economies begin the process of convergence. This will reduce the potential for migration flows, since the incentives to emigrate are much lower than a static model would suggest. This is what happened in Portugal when they joined the EU in 1986. However, the potential for migration may still be

² A measure of skilled and unskilled wage rates by country for 2000 was obtained in the following manner. An index of human capital was first derived for each country. This was obtained by weighting the index of returns for each level of education by the proportion of those in employment in that educational category. Then average hourly wage rates (for employees) and labour costs (for employers) in euro were taken from the Eurostat Labour Cost Survey for 2000. The skilled rates are obtained by dividing the average wage rate for all labour by an index of human capital and multiplying by the index of returns for skilled labour. A similar method was used to obtain the measure of unskilled wage rates.

sufficient in the accession countries to have an appreciable impact on labour supply as people adjust their expectations to the advent of free movement of labour.

A study of wage dispersion in Poland between 1988 and 1996 shows that skilled wage rates rose much more rapidly than unskilled over that period (Keane and Prasad, 2002). At the same time, we know from Boeri and Brucker, 2000, that the bulk of the significant emigration from Poland over that period was of skilled labour, substantially tightening domestic supply. Under these circumstances it is in no way surprising that skilled wage rates rose rapidly. If any of the forecasts for future emigration from these countries in Boeri and Brucker, 2000, and Sinn and Werding, 2001 were to be realised, there would be a further dramatic tightening of the labour markets for skilled labour in the origin countries. The evidence from Ireland in the late 1990s shows the potential importance of this mechanism in driving changes in skilled wage rates. In the Irish case the immigration of skilled labour resulted in a narrowing in wage dispersion and higher economic growth (Barrett, *et al.*, 2002), the opposite of the potential effects of skilled emigration on the new EU members.

Large scale emigration of skilled labour would set off a process driving rapid convergence in skilled wage rates between the new EU members and the existing member states. Even if many of the skilled emigrants initially work in unskilled employment in the destination countries the effect would still be to promote convergence between skilled wage rates in the origin countries and unskilled rates in the destination countries. As there are only around 15 million people aged 20 to 34 in the new member states, emigration on the scale predicted could have very big labour market effects in the origin countries.

5. Human Capital

The importance of investment in human capital in promoting growth has long been recognised in economic theory. However, there remains considerable controversy about its practical significance in explaining differentials in realised growth rates. There are difficulties in measurement of the stock of human capital and there have been a wide range of comparative studies that have tried to quantify its role. Nonetheless there is considerable evidence that it plays a very important role in promoting economic growth and hence in underpinning the process of economic convergence (de la Fuente and Ciccone, 2003).

The investment in human capital can affect the economy through a number of different channels: it can increase the productivity of the work force; it can increase labour-force participation, especially by women; and it can reduce the numbers of unskilled at risk of unemployment. There is extensive data for EU countries showing the return to education for the individual. All of them indicate substantial private gains from education. For Portugal those with a third level education earn around 178% of what someone who has only completed their second level education. For Germany the figure is 145% and for Italy it is a low 127%.³

While the returns to human capital for the individual may be substantial at a point in time, theoretically this might not be the case over time as the supply of skilled labour rises. There is the potential for “qualification inflation”, with the increase in the supply of skilled labour driving down the price. However, the evidence from a range of studies suggests that this is not necessarily the case. For the United Kingdom and the United States there is extensive evidence that the returns to education have, if anything, risen over time (Harmon, Walker and Westergaard-Nielsen, 2001). The evidence for Ireland indicates that the returns to education rose markedly between 1987 and 1997 and then fell back somewhat to 2000 with a shortage of unskilled labour and an elastic supply of skilled labour (Barrett, Fitz Gerald and Nolan,

³ These figures are taken from OECD, 2003, *Education at a Glance*.

2002). For Poland there was a dramatic increase in the returns to education between 1988 and 1996 (Keane and Prasad, 2002).

The differences in the stock of human capital, and more recent trends in investment in human capital, play a significant role in explaining differences in individual economic performance. In the immediate aftermath of the second world war many countries in Northern Europe invested heavily in the human capital of their young population. This investment in the immediate post-war years produced its maximum rate of return in countries such as Austria and Germany in the 1970s (Koman and Marin, 1997). The investment in human capital made forty years ago is reflected in the stock of human capital of the population aged 55 to 59 in those countries today. Thirty years ago there were major differences in the stock of human capital between the cohesion countries and the rest of Northern Europe. As shown in Figure 10, for the existing EU 15, as well as for a number of states in Central Europe, around 80% of this cohort completed second level education. However, for Ireland, Spain, Portugal and Greece the situation was very different. In what can now be referred to as the “Cohesion” countries only 40% of those aged 55 to 59 today had the benefit of completing second level education.

Figure 10: Educational Attainment of Population Aged 55-59

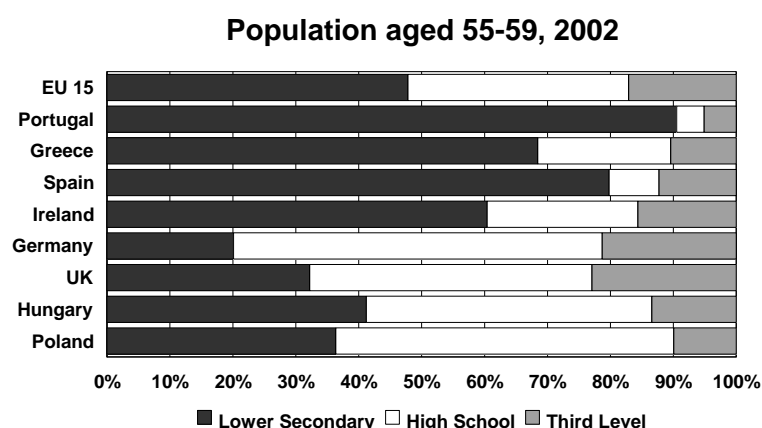
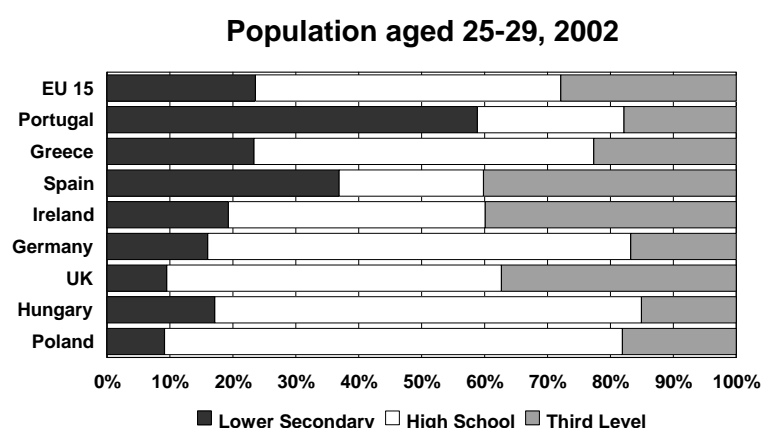


Figure 11: Educational Attainment of Population Aged 25-29

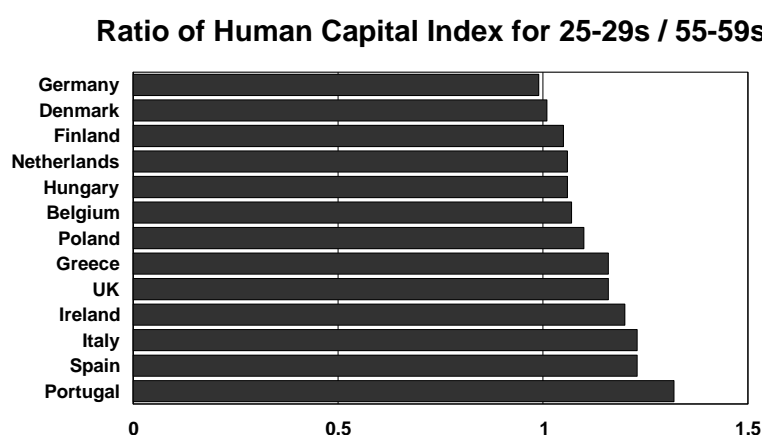


However, as shown in Figure 11, for 25-29 year olds the situation in the cohesion countries is very different today. In the case of both Ireland and Spain 40% of that cohort had completed third level education in 2002, which is above the EU average.

With the exception of Ireland and Greece, there was less progress in increasing the share of the population completing their high school education. For Spain almost 40% of the population aged 25-29 had not completed high school whereas for Portugal the figure was around 60%.

Using these data on educational attainment as weights, it is possible to use the data on the returns to education to generate a human capital index for the 25-29 cohort and the 55-59 cohort in a range of different countries. Figure 12 shows the ratio of the index for 25-29 year olds to that for 55-59 year olds, providing a measure of the investment in human capital over the last 30 years in the cohesion countries and a range of other EU and accession countries. This Figure shows that the index for countries like Germany, Denmark, Finland and Hungary, which already had good educational systems 30 years ago, increased little over time. However, for Greece, Spain, Portugal, Ireland, which all had relatively poor educational systems a generation ago, there has been considerable progress.⁴ Of the richer EU countries there has also been significant additional investment in education in Italy and the UK over the last 30 years.

Figure 12: Investment in Human Capital



In spite of the major improvement in educational attainment, Portugal still has a low level of attainment as shown in Figure 8. The very high proportion of the population who have not completed high school in Portugal has serious implications for productivity and, therefore, for convergence in that economy. For Spain, while there has been major progress in the proportion of the population going on to third level, the proportion not completing high school is very high.

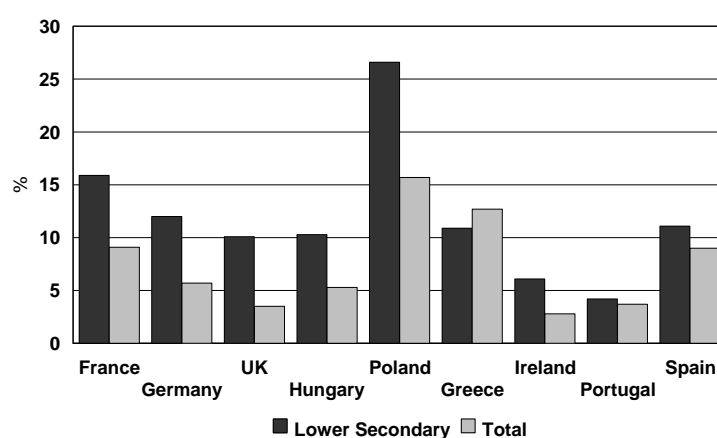
De la Fuente and Ciccone, 2003, comment that the returns to additional education for those with a very low level of basic attainment are particularly high. A study by Breen and Shortall, 1992, for Ireland, showed that upgrading the educational attainment of those leaving school with no qualifications to at least the most basic level of qualification would greatly reduce the level of unemployment, and of state expenditure on unemployment benefits. This suggests the possibility of significant further gains to investment in education in both Spain and Portugal.

The evidence discussed in de la Fuente and Ciccone, 2003, shows that investment in human capital can play an important direct role in raising productivity and hence promoting convergence. It is clear from the data shown above that there has been a very significant upgrading of educational attainment in the cohesion countries over the last 30 years. This

⁴ Data on the returns to education are taken from OECD *Education at a Glance*. For Poland they are taken from Keane and Prasad, 2002 and for Greece from Tsakloglou and Cholezas, 2000.

investment in human capital is a very important factor in explaining the more rapid growth in productivity that has contributed to the convergence in living standards.

Figure 13: Unemployment Rates by Educational Attainment, 25-29 year olds



In addition to its effects on enhancing productivity, investment in human capital also helps reduce unemployment by reducing the supply of unskilled labour by turning the unskilled into skilled workers. As shown in Figure 13, those with the lowest level of educational attainment have significantly higher rates of unemployment in Ireland and Spain (as in France Germany and the UK). While the Lisbon Agenda addresses the need to increase the number of unskilled jobs in the EU to address this problem, probably a more effective long-term solution is to reduce the supply of unskilled labour by investment in education. This approach is consistent with the evidence presented in de la Fuente and Ciccone, 2003.

Finally, the investment in human capital also has the effect of raising female labour force participation. This is because the participation rate for women with third level education is much higher than that for women who have completed high school. In turn, participation rates for women who have completed high school are higher than for those with very limited educational attainment. As discussed earlier, the rise in participation rates has played an important role in raising the growth in GDP per head in the cohesion countries. This is an additional channel through which investment in human capital has contributed to the convergence process.

This analysis suggests that investment in human capital has played an important role in promoting convergence by the cohesion countries. For Portugal, in particular, the substantial investment to date still leaves that country with a relatively low stock of human capital. For many of the accession countries the stock of human capital is already quite high. However, the experience of the cohesion countries suggests that investment in human capital can play an important role in their convergence process. The dislocation involved in the transition process adversely affected the educational systems in some countries leaving room for further improvement.

5. Development Policies

While much attention is devoted in all member states to the budgetary process and the stance of fiscal policy, sensible fiscal policy cannot of itself raise the potential growth rate of an economy. It is only policy measures that impact on the supply side of the economy that can raise the potential growth rate. As discussed above, investment in human capital has an important role to play in raising the productive potential of the accession countries. In addition, the wide range of public policy measures covered by the Lisbon Agenda, which help

promote a competitive economy can play a vital role in making economies more flexible and competitive (Sapir, 2003). In many cases these policies, when considered individually, may appear unexciting and unimportant. However, their cumulative impact can make the difference between convergence and divergence.

Many studies have considered the importance of investment in physical infrastructure in promoting growth. The conclusion of these studies is that, like a child who has outgrown her clothes, a shortage of physical infrastructure can constrain an economy. However, “too much” infrastructure cannot add to the growth potential of an economy, and could burden a country with unsustainable debts.

It is difficult to measure the stock of public infrastructure. However, there is evidence that a shortage of physical infrastructure has constrained economies from catching up. For example, ESRI, 2003, shows that for Ireland the shortage of infrastructure was a particularly serious constraint on growth in 2000, having been largely adequate to the economy’s needs in the early 1980s.

Figure 14: Investment as a share of GDP, 2001

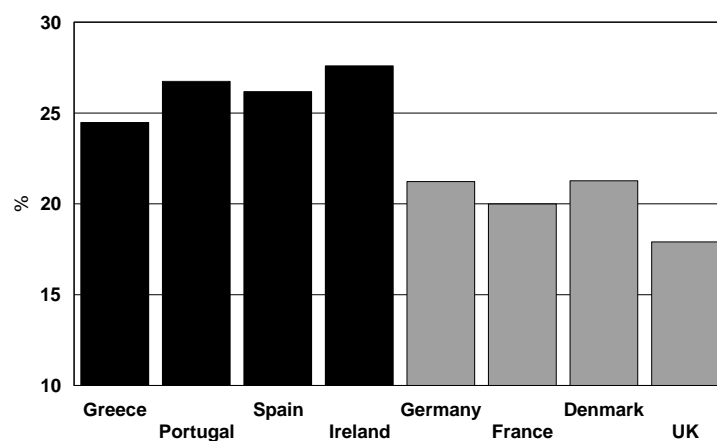
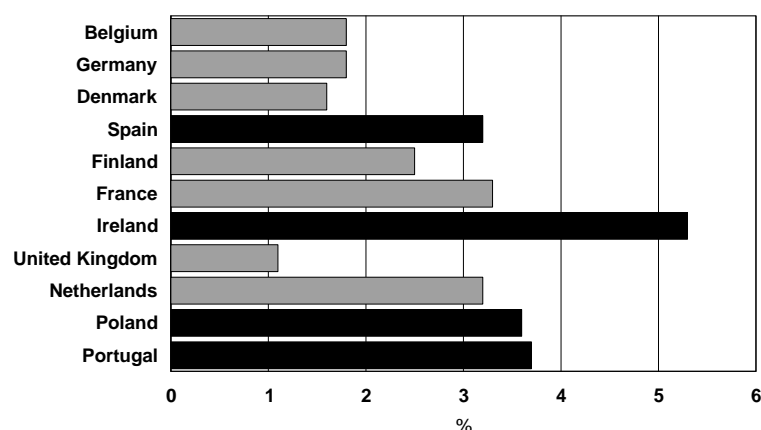


Figure 15: Public Investment as % of GDP



Note: For Ireland investment is expressed as a % of GNP.

Figure 14 shows that the level of investment in the cohesion countries is roughly five percentage points of GDP higher than in the richer EU economies. This reflects the deficit in infrastructure public and private (housing) in these economies. For each of these economies

the need to devote such a high share of income to investment means that their level of consumption is reduced. As a result, for consumers the rise in living standards has been slower than is suggested by the convergence in GDP per head.

In addition, as shown in Figure 15, Ireland, Spain and Portugal have a substantially higher level of public investment, financed partly by the EU CSF and partly by domestic tax revenues. In the case of the existing EU the major investment in infrastructure in the 1950s and 1960s was partly financed by borrowing. However, under the Stability and Growth Pact (SGP) this is not permitted today for the cohesion countries. However, the significant transfers under the EU CSF partly offset this constraint.

For the accession countries there is likely to be a continuing need for infrastructural investment over the coming two decades. If the rates of return from such investment are as high as suggested in the studies discussed below, some limited borrowing might be justified to finance it. However, this is not possible under the SGP. Instead, the EU CSF will help relax this constraint, permitting a more rapid deployment of necessary investment.

Figure 16: Number of Adults per Independent Household

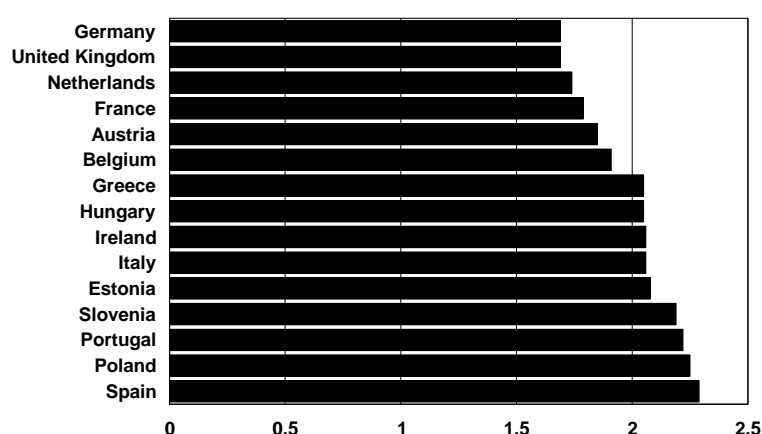


Table 1: Number of dwellings completed per thousand population

Country	1992-3	2000-3
Denmark	3.1	3.0
Finland	7.3	5.9
Greece	8.3	8.5
Ireland	6.3	17.3
Netherlands	6.0	4.1
Poland	3.5	2.7
Portugal	5.6	10.3
Spain	3.3	10.2
United Kingdom	3.3	3.1
United States	4.5	6.1

Source: United Nations Economic Commission for Europe. UK - UK ONS. US - US Census Bureau New Residential Construction. Spanish data for 1993, all others 1992. Irish data for 2003, Netherlands, Spain, UK and US data for 2002. Greece data for 2000. Rest data for 2001.

In addition to the need to provide public infrastructure there is a significant gap in the stock of private infrastructure in the form of dwellings in many of the new member states. Figure 16 shows the number of adults per independent household for a range of EU countries. It shows a

fairly clear pattern where countries with an ageing population, which have had a high standard of living for a sustained period, have a relatively low number of adults per independent household. Typically countries such as Germany, the UK and France have less than 1.8 adults per household. For countries where the population is still relatively young (Ireland, Spain, and Portugal), with relatively few dwellings being released by the oldest age cohorts, there are significantly more adults per dwelling. In addition, where countries have a standard of living well below the EU average (Slovenia and Poland) they have a very much lower endowment of dwellings relative to the adult population.

For those countries where living standards have shown significant convergence to the EU standard of living (Ireland, Portugal and Spain) the relatively high number of adults per dwelling, combined with increased real incomes could be expected to result in a major increase in investment in dwellings by the household sector.⁵ It will take many years of high investment to reduce the number of adults per household in the new member states to close to the rate in the more developed EU members.

The effect of EMU has been to reduce the cost of borrowing for households, increasing the optimal stock of dwellings. Previously households were constrained from rapidly adjusting this stock through investment because of the high and uncertain cost of capital. Even though incomes rose fairly steadily over the last fifteen years it was only with the advent of EMU that there has been a boom in the building of dwellings in Spain, Portugal, and Ireland (Table 1). While this boom is not purely attributable to EMU, the advent of EMU has brought about a substantial fall in real interest rates for households through the reduction in the risk premium (Sinn, 2000). This reduction in real interest rates was particularly important for households as while many larger businesses could fund their investment through borrowing in DMs or dollars, benefiting from the lower real rates, this was not possible for households.⁶

In addition to the reduction in real interest rates there was also more variance in the domestic interest rates of the cohesion countries before EMU. Households in those countries now face a more certain environment in which to borrow, one where interest rates are unlikely ever to reach the heights experienced in 1992/3. This greatly reduces the risks for households in borrowing to finance investment in dwellings.

The shortage of dwellings in many of the new EU member states, and the problems with the quality of much of the existing stock, means that there is likely to be a need for major investment by households in dwellings as incomes rise. However, the timing of this investment may be affected by when each of these countries joins EMU. The reduction in real interest rates, consequent on EMU membership, could have significant positive effects on aggregate investment in these new members (Barrell, Holland and Pomerantz, 2004). This could be especially true for investment in dwellings and it may pose issues for each of these new members concerning how best to manage their housing market.

6. The EU Structural Funds

A range of different studies have looked at the impact of the EU CSF process on the economies of the cohesion countries. Some of these studies have produced quite negative results. These studies with rather negative results have tended to use simple single equation models which relate output to the investment funded under the CSF (Boldrin and Canova,

⁵ This assumes that preferences on household formation are similar across EU members. Differences in demographics and family structure could mean that, even with an identical cost of housing and identical incomes, the optimal stock of dwellings could differ.

⁶ There was no legal restriction but effectively domestic banks were only prepared to lend on mortgages to households in domestic currency.

2003 and Ederveen, Gorter, Mooij, Nahuis, 2002). However, they have generally taken little account of the fact that the CSF interventions are small in magnitude relative to what is going on elsewhere in the economy. They have failed to take account of the range of other developments and, as de la Fuente, 2003b, points out, it is not surprising that they have come to a rather negative conclusion.

There are a range of other studies based on more sophisticated models that have identified a significant positive impact from the EU CSF on the cohesion countries. Boeri, 2002, and Bradley *et al.*, 2003, summarise a substantial number of studies of the accession countries undertaken using the HERMIN model (Bradley *et al.*, 1995). Table 2 summarises these results from HERMIN for the second CSF period, 1994-1999, using two different measures of the long-term impact of the CSF. In the multiplier measure the cumulative impact on GDP over a fifteen-year period is divided by the total expenditure under the CSF. This shows a very substantial payback for Ireland and Portugal, as well as a favourable result for Spain. The second measure is a “rate of return” where the permanent increase in GDP is measured relative to the cumulated expenditure under the CSF. This measure underestimates the rate of return because it takes no account of the very substantial, but temporary, demand side effects as the CSF money is spent.

Table 2: Measures of the Impact of CSF expenditure

Impact of CSF 1994-2010, Bradley <i>et al.</i> 2003			
Greece	Ireland	Portugal	Spain
	Cumulative Multiplier		
1.07	2.83	2.55	1.77
	Crude Rate of Return:		
3.67	10.47	11.37	8.13
Impact of CSF: 2000-2002, Fitz Gerald <i>et al.</i> 2003			
	Cumulative Multiplier		
	3.0		
	Crude Rate of Return:		
	18.0		

Table 2 also shows the estimated impact of the CSF in Ireland for the first years of the current planning period. This study (ESRI, 2003) benefited from a range of microeconomic evidence permitting a more precise quantification of the effects of the CSF within the model context. It suggested a rather similar result to that found in previous studies using the HERMIN model.

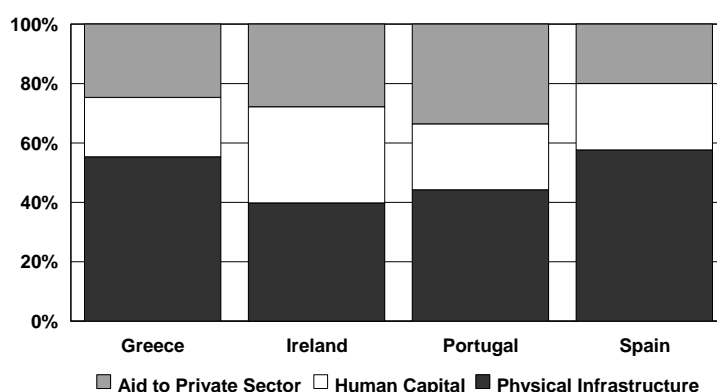
A rather different model-based approach in a study by de la Fuente, 2003b, has also produced an estimate of the impact of the CSF for the 1994-99 period for Spain. This study would suggest an even higher impact than the measures shown in Table 2.

While there remains considerable uncertainty about the precise quantification of the benefits of the CSF funded investment, these studies indicate substantial economic rates of return for Spain, Ireland and Portugal. However, the magnitude of the CSF interventions is relatively small relative to the size of these economies. In the 1994-99 period the CSF expenditure ranged from under 1.5% of GDP in Spain to something over 4% in Greece (Bradley *et al.*, 2003). In addition, the supply-side benefits of the investment will take some considerable time to mature. Thus even with substantial rates of return, the CSF interventions only account for a minority of the convergence in output per head achieved by Ireland, Spain and Portugal over the 1990s.

Figure 17 shows how the four cohesion countries used the EU CSF funding over the course of the 1990s. Spain and Greece devoted a particularly high share to financing investment in physical infrastructure, while Ireland concentrated more on human capital. Portugal devoted a particularly high share to aids to the private sector with Ireland in second place on this count.

The recent Mid-Term Evaluation of the CSF for Ireland, ESRI, 2003, suggested a high rate of return on investment in human capital and in physical infrastructure. However, it suggested that there was a generally lower rate of return on aids to the private sector, with the exception of support for R&D. This reflected the limited evidence of continuing market failure which would justify such aid. As a result, it was recommended that funding be redirected to human capital and physical infrastructure. With the winding down of CSF support for Ireland this recommendation primarily affects the allocation of Irish tax payers funds.

Figure 17: Allocation of EU CSF



Source: Regional Development Studies No. 26

The evidence from successive evaluations of the Irish CSF, and also the experience with the CSF in the other cohesion countries, would suggest that future CSF finance for the accession countries may produce greater long-term benefit if it is concentrated on investment in human capital and physical infrastructure. However, the experience of the cohesion countries also indicates that each country's economy has different needs and there is not a simple formula for deciding on national investment priorities.

At least as important as the direct funding provided by the EU has been the effect of the CSF process in introducing an improved methodology for undertaking public investment (Fitz Gerald, 1998). The increase in funding under the EU CSF encouraged the government to raise public investment from its low level in the late 1980s. This was particularly important for Ireland as it emerged from the fiscal crisis of the 1980s. While domestic policy makers lacked faith in the future growth potential of the economy, the ready availability of EU funds leveraged a bigger increase in public investment than would otherwise have occurred. Without such a stimulus Ireland could have found itself suffering from underinvestment in the face of rapid growth in recent years. As such it had a positive influence on the overall stance of public policy.

The CSF process has also encouraged the introduction of effective long-term planning of public investment in the cohesion countries. It is also encouraging such a development in the accession countries, even before membership. In the past, investment projects stopped and started in line with short-term economic pressures on governments, resulting in significant waste of resources. Now the formulation of a national development plan and its subsequent implementation without major interruption leads to a more rational allocation of resources. In addition, the need to satisfy the donor countries, through the EU Commission, that their money is well spent has resulted in the introduction of a set of evaluation procedures which has helped change the way the administration approaches public expenditure. In the past the only question, once money had been voted by parliament, was whether it had been spent in accordance with regulations. Now there is increasing interest in assessing how effective the expenditure has been. In many cases these evaluations have been published and, while not always listened to, they have had a significant influence on policy.

The programme approach to public investment has also tended to focus attention on particular policy problems, making public servants involved in the planning process consider the wider implications of individual measures. For example, each of the so-called operational programmes under the CSF has its own monitoring committee consisting of relevant public servants, representatives of the EU Commission, some representatives of outside interests and, in the case of the major programmes, an independent evaluator reporting to the committee rather than to the government. While ultimate responsibility for spending decisions really rests with the national governments, the involvement of the EU Commission officials has helped nudge domestic decision makers towards measures which are desirable on economic criteria. The long-term involvement of key EU officials in the process also helps provide continuity in decision making.

7. Conclusions

The process of EU integration on its own has played an important role in promoting convergence between the four existing cohesion countries, Ireland, Spain, Portugal and Greece, and the EU average level of output per head. In the case of Ireland and Portugal the higher rate of growth in productivity has been particularly important in bringing about convergence. This has implications for the accession countries: it is important to concentrate on policies that will enhance the growth of productivity in the longer term. However, another important factor in the convergence process was the fall in age dependency. This is not a factor that can be repeated elsewhere.

The way the labour market interacts with the convergence process is important. If wage rates converge to the EU standard of living more rapidly than the rate of productivity, then the convergence process will be interrupted or halted. This suggests the importance of developing flexible labour markets in the accession countries. In addition, because increases in the tax wedge affecting earnings tends to impact on wage formation, an unduly rapid rise in the standard of public services (and hence taxation) could also adversely impact on the convergence process. This was the case in Ireland in the 1980s. It is important that the requirements of accession do not push the accession countries into raising their expenditure on public services more rapidly than their economies can sustain.

The rate of increase in investment in human capital has been higher in the cohesion countries over the last thirty years than in the rest of the EU. This has been an important factor driving the higher rate of productivity growth in these countries. This reflects the fact that these countries had been slow to appreciate the importance of investment in human capital in the 1950s and 1960s and had a major deficit to make up. Even with this investment Portugal still displays a significantly lower stock of human capital than the rest of the EU. While over the last 30 years the accession countries generally had educational systems comparable to those in Western Europe, rather than in the cohesion countries, there is a continuing need to invest in them.

A major factor underlying the high rate of unemployment in the EU and in the accession states is the size of the unskilled labour force relative to demand for unskilled labour. In a global economy the demand for skilled labour is rising rapidly. Unless economies raise the average educational attainment of their labour force in line with the growth in demand for skilled labour, there will either be high levels of unskilled unemployment or else an increase in the dispersion of wage rates. While policy can attempt to stimulate the demand for unskilled labour, it is probably more sustainable to invest through the educational system in turning the unskilled labour of the future into skilled labour. This would greatly enhance the labour force prospects of those involved, increasing welfare, and could significantly reduce future unemployment transfers.

The stock of physical infrastructure in the cohesion countries is still significantly lower than in the rest of the EU. The shortage of physical infrastructure is a significant constraint on future growth and convergence. As a result, the level of both private and public investment in these countries is significantly higher than in the rest of the EU. This greater concentration on investment means that relative consumption levels in the cohesion countries lag further behind the rest of the EU than is the case for output. It will only be when the stock of infrastructure in these countries has reached an acceptable level, probably some time in the next decade, that convergence in living standards can be complete. The EU CSF payments have played a significant role in reconciling this greater need to invest with the constraints on borrowing under the Stability and Growth Pact.

The accession countries have similar needs for accelerated investment and will benefit by a continuation of the EU support for cohesion. The substantial returns to infrastructure investment in the cohesion countries, when properly managed, suggests a significant payback to such investment in the accession countries. Each country will have to determine its own priorities for public investment. There is a danger that the key role of human capital may be undervalued in planning future investment. In addition, the experience of the CSF in Ireland suggests that less emphasis should be put on direct aid to the private sector and a higher proportion of the available resources should be devoted to investment in physical infrastructure and human capital.

Finally, experience in the cohesion countries suggests that the structural funds process brings administrative benefits over and above the direct financial aid. Its emphasis on medium-term planning, consistency between different forms of investment, and evaluation of results can benefit the process of public investment, not just where that investment is funded as part of the EU CSF, but also where it is funded out of domestic taxation.

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